

REMARKS

Claims 1-4, 6-18, 21 and 22 are pending in this application. By this Amendment, (1) the specification is amended to correct typographical errors therein and to capitalize trademarks/tradenames noted in the Office Action, (2) claim 1 is amended to include the subject matter of claim 5, and claim 5 is correspondingly canceled, in order to place claim 1 in condition for allowance as noted in the Office Action, (3) claim 2 is amended to be in independent claim form in order to place this claim in condition for allowance as noted in the Office Action, (4) claims 6, 12 and 16 are each amended to revise the dependency in view of the cancellation of claim 5, (5) claim 8 is amended in accordance with the suggestion of the Patent Office, (6) claim 9 is amended for better antecedent basis in referring back to claim 1, (7) non-elected claims 19 and 20 are canceled, and (8) claims 21 and 22 are each amended to more clearly define these claims over the teachings of Miyashita and Inoue, as discussed more fully below.

No new matter is added by this Amendment. Support for the amendment to claim 21 is found in the original specification at, for example, paragraph [0043].

I. Restriction Requirement

Applicants hereby affirm the election of claims 1-18, 21 and 22. By this Amendment, non-elected claims 19 and 20 are canceled.

II. Information Disclosure Statement

In the Office Action, it was indicated that the IBM Technical Disclosure Bulletin listed in the Information Disclosure Statement was not present in the application file and could not be located by the Patent Office.

Attached to this Amendment is a copy of the IBM Technical Disclosure Bulletin originally submitted with the November 13, 2001 Information Disclosure Statement. Also

attached for the convenience of the Patent Office is a new Form PTO-1449 listing only the IBM Technical Disclosure Bulletin. The Examiner is respectfully requested to consider the reference, initial the Form PTO-1449, and return the initialed Form PTO-1449 to the undersigned with the next communication from the Patent Office.

III. Specification

The Office Action noted the occurrence of non-capitalized trademarks/tradenames in paragraphs [0048] and [0050] of the specification. By this Amendment, these paragraphs of the specification have been amended to capitalize the noted trademarks.

IV. Suggestion Regarding Claim 8

In the Office Action, it was suggested to amend claim 8 to clarify that the fluoropolymer was a copolymer. By this Amendment, claim 8 has been amended as suggested by the Patent Office.

V. Rejection Under 35 U.S.C. §102(b)

Claims 1, 4, 7-9, 11, 14, 15 and 21 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,502,470 (Miyashita). This rejection is respectfully traversed.

A. Claim 1 and Claims Dependent Therefrom

Original dependent claim 5 was not rejected as anticipated by the teachings of Miyashita. In fact, the Office Action indicated that original dependent claim 5 recited allowable subject matter.

By this Amendment, claim 1 has been amended to include the subject matter of original dependent claim 5 therein. Accordingly, Applicants respectfully submit that claim 1 is in condition for allowance, and that the anticipation rejection of claims 1, 4, 7-9, 11, 14 and 15 relying upon Miyashita is overcome. Reconsideration and withdrawal of the rejection

under 35 U.S.C. §102(b) relying upon Miyashita as to claims 1, 4, 7-9, 11, 14 and 15 are thus respectfully requested.

B. Claim 21

Claim 21, as amended by this Amendment, recites a method of applying an ink-phobic coating to an ejector of an ink jet printhead, comprising applying the ink-phobic material to an outer surface of the ejector that has one or more openings therethrough and, following completion of the application of the ink-phobic material, subsequently forcing the ink-phobic material through the openings of the ejector to coat an interior of the ejector with the ink-phobic material. Applicants respectfully submit that Miyashita fails to teach such a method.

Miyashita describes a method of forming an ink jet recording head comprising preparing a polymer solution of a fluoropolymer in a solvent, coating the polymer solution on the whole surface of a nozzle plate having ink jet holes therein by dipping the nozzle plate into the polymer solution, and then removing the water-repellant layer formed on the reverse surface of the nozzle plate (the opposite side of a side from which an ink is jetted) by grinding. See, for example, col. 4, lines 51-65 of Miyashita.

In the Office Action, it was alleged that the emersion of the nozzle plate into the polymer solution in Miyashita satisfied the process steps recited in claim 21. Applicants respectfully disagree.

In particular, Miyashita teaches only an application step for applying the water-repellent layer onto the nozzle plate, which single application step involves dipping the nozzle plate into a polymer solution to result in deposition of the water-repellent layer onto the nozzle plate. By contrast, the method of claim 21 comprises not only a first application step, but also a subsequent step of forcing the applied ink-phobic material through the openings of an ejector in order to coat the interior of the ejector with the ink-phobic material.

Miyashita completely fails to teach or suggest any such subsequent forcing step for coating the interior of an ejector with an ink-phobic material.

Applicants respectfully submit that, contrary to the conclusion in the Office Action, the application step of Miyashita in which the nozzle plate is dipped into a polymer solution cannot be found to teach or suggest the forcing step of present claim 21 that is conducted following completion of the application of an ink-phobic material to an outer surface of an ejector.

For at least the foregoing reasons, Applicants respectfully submit that Miyashita fails to anticipate present claim 21. Reconsideration and withdrawal of the rejection of claim 21 under 35 U.S.C. §102(b) relying upon Miyashita are respectfully requested.

VI. Rejections Under 35 U.S.C. §103(a)

A. Claim 10

Claim 10 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Miyashita in view of U.S. Patent No. 6,193,352 (Sharma). This rejection is respectfully traversed.

Claim 10 depends from claim 9, which in turn depends from claim 1. For the reasons discussed above, claim 1 should be in condition for allowance. As such, dependent claim 10 should also be in condition for allowance as depending from an allowable independent claim.

Accordingly, Applicants respectfully submit that this rejection is moot. Reconsideration and withdrawal of this rejection are thus respectfully requested.

B. Claims 21 and 22

Claims 21 and 22 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Miyashita in view of U.S. Patent No. 5,796,415 (Inoue). This rejection is respectfully traversed.

In the Office Action, it was alleged that Inoue taught applying water-repellent coatings to an ink jet recording head by a number of methods including spraying, spin coating, immersion, or transfer with an absorbing medium. It was thus alleged that if one of ordinary skill in the art were to have substituted a spraying application as described in Inoue for the dipping application described in Miyashita, the invention of claims 21 and 22 would have been achieved. Applicants respectfully disagree.

Specifically, Inoue suffers from the same deficiencies of Miyashita discussed above. At best, Inoue describes only a single step application process, e.g., spraying, and fails to teach or suggest a subsequent step of separately forcing the sprayed-on material through the openings of an ejector in order to coat an interior of the ejector with the sprayed-on material.

In fact, Inoue directs one of ordinary skill in the art away from such a subsequent forcing step, describing at col. 6, lines 62+ that measures must be taken "for preventing the water repellent from passing into an internal wall face of [sic-the] ink channel from a discharge port." Inoue thus would not seek to force the sprayed-on material into openings of the ejector, but would instead teach taking steps to prevent the sprayed-on material from entering into such openings.

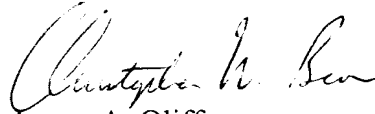
For at least the foregoing reasons, Applicants respectfully submit that neither Miyashita nor Inoue teach or suggest a method of applying an ink-phobic coating to an ejector of an ink jet print head comprising the steps of applying the ink-phobic material to an outer surface of the ejector, and following completion of the applying of the ink-phobic material, subsequently forcing the ink-phobic material through openings of the ejector in order to coat an interior of the ejector with the ink-phobic material as defined in present claim 21. Reconsideration and withdrawal of this rejection are thus respectfully requested.

VII. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-4, 6-18, 21 and 22 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachments:

Form PTO-1449
IBM Technical Disclosure Bulletin

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